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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
09 688,733	10 16 2000	Yoshimasa Saito	09792909-4653	3697

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EXAMINER

DUONG, THOI V

ART UNIT PAPER NUMBER

2871

DATE MAILED: 02 18 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/688,733

Applicant(s)

SAITO, YOSHIMASA

Examiner

Thoi V Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-13 ~~is/are~~ are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-13 ~~is/are~~ are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other _____

DETAILED ACTION

1. This office action is in response to the Amendment, Paper No. 6, filed November 12, 2002.

Accordingly, claims 1-4 and 6-13 were amended, and claims 5 and 14 were cancelled. Currently, claims 1-4 and 6-13 are pending in this application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

- (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
- (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claims 1, 2, 4 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen (USPN 6,097,463).

As shown in Fig. 1, Chen discloses a liquid crystal comprising a pair of transparent substrates 10 and 11, a liquid crystal 12 sandwiched between said pair of transparent substrates, and liquid crystal alignment films 18 and 20 formed between side surfaces of said respective transparent substrates and said liquid crystal, wherein:

each of a plurality of pixel regions of said display has a first alignment direction for a front alignment film portion of said pixel and a second alignment direction for a

back alignment film portion of said pixel with no other alignment directions for said pixel (col. 5, lines 12-29),

wherein said liquid crystal alignment directions are in opposite directions for each of the alignment films at respective regions of the alignment films corresponding to adjacent pixels and wherein adjacent pixels do not share two common alignment directions as shown in Figs. 2A and 2B.

Finally, according to USPN 5,657,105, McCartney defines that each pixel or dot is the smallest area which can be independently operated (col. 1, lines 16-19).

Therefore, this rejection is also applied to "dot regions" recited in claim 1.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 6, and 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (USPN 6,097,463) in view of McCartney (USPN 5,657,105).

With respect to claims 8 and 11, Chen discloses a liquid crystal element that is basically the same as that recited in claims 8 and 11 except that the alignment films are not formed of ultraviolet light responsive type material and the "rubbing" technique is used on the upper and lower substrates for alignment of pixel or dot regions. McCartney discloses in Prior Art that each pixel or dot, which is the smallest area which can be independently operated, consists of two halves where one half passes light exactly as if

it were 180 degrees rotated with respect to the other and a known rubbing technique is used on the upper and lower substrates to create a desired direction on each individual dot or pixel (col. 1, lines 15-20 and lines 38-41). Due to time consuming, expense and loss of active area resulted from the rubbing process, McCartney discloses a technique of photopolymerization of polymer-coated substrate with linearly polarized light to induce an anisotropic, uniaxial orientation of polymer molecules. This produces the same effect as "rubbing" and it is suggested that the technique could be used on the upper and lower substrates of the liquid crystal display element (col. 1, line 38 through col. 2, line 13). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal element of Chen with the teaching of McCartney by forming ultraviolet light responsive type liquid crystal element alignment films over first sides of said pair of transparent substrates and irradiating the alignment films such that each of a plurality of dot regions (or pixel regions) of said display has a first alignment direction for a front alignment film portion of said dot (or said pixel) and a second alignment direction for a back alignment film portion of said dot (or said pixel) with no other alignment directions for said dot (or said pixel) so as to improve productivity and product quality.

With respect to claims 3, 6, 9, 10, 12, and 13, McCartney further teaches that each individual dot may separately be oriented in any desired direction which was not possible in the Prior Art for improving display viewing angle (col. 3, lines 1-37). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the liquid crystal display element of Chen with the teaching

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of McCartney by forming four closely arranged dot regions (or pixel regions), each have two different alignment directions and none of the four dot regions (or pixel regions) share two common alignment directions so as to improve viewing angle for the display.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (703) 308-3171. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (703) 305-3492.

Thoi Duong



02/08/2003

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